

CLAIMS:

Accordingly, what is claimed is:

1. A test development tool comprising:

test development program code for accessing first and second pre-established test programs, each of said first and second pre-established test programs having been previously established for respective first and second pre-existing integrated circuit devices, and said first and second pre-established test programs each having respective first and second sets of subtest code portions;

test development program code for evaluating the first and second sets of subtest code portions and determining whether any respective subtest code portions of said first and second sets of subtest code portions have features allowing for combination in a new test program, said test development program code for the evaluating and determining steps providing at least one output result thereof;

test development program code for defining a new test program including at least one new subtest code portion for concurrently testing first and second pre-existing integrated circuit devices using the at least one output result of the evaluating and determining steps.

2. A test development tool according to claim 1, in which the at least one new subtest code portion for concurrently testing provides for faster overall device test execution.

3. A test development tool according to claim 1 which further includes:

test development program code for prompting a user to participate in the evaluating and determining steps of the subtest code portions of the first and second pre-established test programs.

4. A test development tool according to claim 1 wherein said features allowing for combination comprise respective subtest code portions from each of said first and second pre-established test programs which are substantially operatively compatible.

5. A test development tool according to claim 4 wherein said subtest code portions having features allowing for combination are defined in said defining step as a single set of

subtest code portions to be performed via a common port in a multi-port testing environment.

6. A test development tool according to claim 5 wherein said features allowing for combination are selected from the group consisting of clocks and common pins.

7. A test development tool according to claim 1 wherein said features allowing for combination comprise respective subtest code portions from each of said first and second pre-established test programs which are mutually exclusive, yet provide for concurrent operation via discrete first and second ports.

8. A test development tool according to claim 7 wherein the respective subtest code portions from each of said first and second pre-established test programs are evaluated for time of operation.

9. A test development tool according to claim 8 which further includes:

test development program code for prompting a user to participate in the evaluation of the timing of the subtest code portions of the first and second pre-established test programs.

10. A test development tool according to claim 8 wherein the respective subtest code portions from each of said first and second pre-established test programs are matched with each other based upon the similarity of their respective times of operation.

11. A test development tool according to claim 10 wherein the respective subtest code portions from each of said first and second pre-established test programs are matched in a manner selected from the group consisting of:

matching respective subtest code portions from each of said first and second pre-established test programs wherein the respective subtest code portions are matched one to one having similar respective times of operation; and,

matching respective subtest code portions from each of said first and second pre-established test programs wherein a subtest code portion from the first pre-established test program is matched with a plurality of subtest code portions from the second pre-established test program such that the total times of operation of the plurality of subtest

code portions is substantially similar to the subtest code portion from the first pre-established test program.

12. A test development tool according to claim 1 wherein the respective subtest code portions from each of said first and second pre-established test programs are evaluated for new subtest code portion sequencing.

13. A test development tool according to claim 12 wherein the respective subtest code portions from each of said first and second pre-established test programs are matched with each other to create respective new subtest code portions and are placed into a new test flow as a result of the subtest sequencing evaluation.

14. A test development tool according to claim 12 wherein the respective subtest code portions from each of said first and second pre-established test programs are matched with each other to create respective new subtest code portions and are placed into a new test flow as a result of the subtest sequencing evaluation and based upon one of the testflows from one of the first and second pre-established test programs.

15. A test development tool according to claim 12 which further includes:
test development program code for prompting a user to participate in the sequencing of the new subtest code portions.

16. A test development tool according to claim 1 which further includes:
test development program code for creating the new combined subtest code portions from the combination of one or more of the subtest code portions from respectively each of said first and second pre-established test programs, said test development program code including subcode selected from the group consisting of:
pin assignment subcode;
subtest timing subcode;
voltage level subcode; and,
stimulus sequence subcode.

17. A test development tool according to claim 16 which further includes:

test development program code for prompting a user to participate in the creating of the new subtest code portions.

18. A test development tool comprising:

test development program code for evaluating relative timings of first and second sets of subtest code portions of first and second pre-established test programs and determining an organization for a combination of respective subtest code portions of said first and second sets of subtest code portions, said test development program code for the evaluating and determining steps providing at least one output result thereof, each of said first and second pre-established test programs having been previously established for respective first and second pre-existing integrated circuit devices;

test development program code for combining subtest code portions, including combining the separate setups of vectors, timings and levels from the respective first and second sets of subtest code portions for the subtest code portions being combined and defining a new combined overall test program including at least one new combined subtest code portion for concurrently testing first and second pre-existing integrated circuit devices using the at least one output result of the evaluating and determining steps; and,

test development program code for providing at least one test method to run the at least one new combined subtest code portion of the new combined overall test program for a new combination device including the first and second pre-existing integrated circuit devices.

19. A test development tool according to claim 18 further comprising test development program code for defining port assignments for the pins of the new combination device.

20. A test development tool according to claim 19 in which the test development program code for defining port assignments is operative in at least one of the times selected from the group consisting of: before an evaluation of the relative timings of first and second sets of subtest code portions, after an evaluation of the relative timings of first and second sets of subtest code portions, after the combining of subtest code portions, and after the providing of at least one test method to run the at least one new combined subtest code portion of the new combined overall test program.

21. A system comprising:

means for accessing a plurality of pre-established test programs, said plurality of pre-established test programs each having subtest code portions and each having been previously established for respective pre-existing integrated circuit devices;

means for evaluating the test code portions of each of said plurality of pre-established test programs and for determining whether any subtest code portions of each of the respective pre-established test programs are operatively compatible, said means for evaluating and determining providing an output result of the evaluation and determination;

means for defining a new test program including at least one new subtest code portion using the output result of the evaluation and determination.

22. A system according to claim 21 which further includes automated test equipment including test development hardware, firmware and software.

23. A method comprising:

accessing first and second pre-established test programs in a multi-port concurrent test environment, each of said first and second pre-established test programs having been previously established for respective first and second pre-existing integrated circuit devices, and said first and second pre-established test programs each having respective first and second sets of subtest code portions;

evaluating the first and second sets of subtest code portions and determining whether any respective subtest code portions of said first and second sets of subtest code portions have features allowing for combination into a new subtest code portion in a new test program, said evaluating and determining steps providing at least one output result thereof;

defining a new test program including a new subtest code portion for concurrently testing first and second pre-existing integrated circuit devices using the at least one output result of the evaluating and determining steps.

24. Apparatus comprising:

a computer readable medium; wherein a computer program is stored on the computer readable medium, the computer readable medium being adapted for developing at least a portion of an integrated circuit test in a concurrent multi-port automated test environment; said computer program comprising:

program code to access first and second pre-established test programs and to access respective first and second subtest code portions of the first and second pre-established test programs;

program code to evaluate whether any of the respective first and second subtest code portions of the respective first and second pre-established test programs may be combined to create a new subtest code portion in a new test program, said program code to evaluate providing at least one output result thereof; and

program code to define a new subtest code portion of a new test program using the at least one output result of the program code to evaluate.